



SMC2870W

EZ Connect™ g 2.4GHz 802.11g

Wireless Ethernet Bridge

USER GUIDE



EZ Connect™ g 2.4GHz 802.11g Wireless Ethernet Bridge User Guide

From SMC's EZ line of low-cost workgroup LAN solutions

SMC®

Networks

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COMPLIANCES

FCC - Class B

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with instructions, may cause harmful interference to radio communications. However, there is no guarantee that the interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient the receiving antenna
- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help

FCC Caution: To assure continued compliance, (example - use only shielded interface cables when connecting to computer or peripheral devices) any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

IMPORTANT NOTE: FCC Radiation Exposure Statement

FCC Radiation Exposure Statement: This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 centimeters (8 inches) between the radiator and your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

SMC declared that SMC2870W is limited in CH1~11 from 2400 to 2483.5 MHz by specified firmware controlled in USA.

Industry Canada - Class B

Operation is subject to the following two conditions:

- 1) this device may not cause interference and
- 2) this device must accept any interference, including interference that may cause undesired operation of the device

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus as set out in the interference-causing equipment standard entitled "Digital Apparatus," ICES-003 of the Department of Communications.

Cet appareil numérique respecte les limites de bruits radioélectriques applicables aux appareils numériques de Classe B prescrites dans la norme sur le matériel brouilleur: "Appareils Numériques," NMB-003 édictée par le ministère des Communications.

This device has been designed to operate with an antenna having a maximum gain of 1.5 dBi.

Antenna having a higher gain is strictly prohibited per regulations of Industry Canada. The required antenna impedance is 50 ohms.

To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the EIRP is not more than required for successful communication.

To prevent radio interference to the licensed service, this device is intended to be operated indoors and away from windows to provide maximum shielding.

Equipment (or its transmit antenna) that is installed outdoors is subject to licensing.

EC Declaration of Conformity

SMC contact for these products in Europe is:

SMC Networks Europe,
Edificio Conata II,
Calle Fructuos Gelabert 6-8, 2o, 4a,
08970 - Sant Joan Despi,
Barcelona, Spain.

Marking by the above symbol indicates compliance with the Essential Requirements of the R&TTE Directive of the European Union (1999/5/EC). This equipment meets the following conformance standards:

- EN 300 328-1 December 2001 V1.3.1
- EN 300 328-2 December 2001 V1.2.1
- EN 301 489-1 September 2001 V1.4.1
- EN 301 489-17 September 2000 V1.2.1
- EN 60950 January 2000

Countries of Operation & Conditions of Use in the European Community

This device is intended to be operated in all countries of the European Community. Requirements for indoor vs. outdoor operation, license requirements and allowed channels of operation apply in some countries as described below:

Note: The user must use the configuration utility provided with this product to ensure the channels of operation are in conformance with the spectrum usage rules for European Community countries as described below.

- This device requires that the user or installer properly enter the current country of operation in the command line interface as described in the user guide, before operating this device.
- This device will automatically limit the allowable channels determined by the current country of operation. Incorrectly entering the country of operation may result in illegal operation and may cause harmful interference to other system. The user is obligated to ensure the device is operating according to the channel limitations, indoor/outdoor restrictions and license requirements for each European Community country as described in this document.
- This device may be operated *indoors or outdoors* in all countries of the European Community using the 2.4 GHz band: Channels 1 - 13, except where noted below.
 - In Italy the end-user must apply for a license from the national spectrum authority to operate this device outdoors.
 - In Belgium outdoor operation is only permitted using the 2.46 - 2.4835 GHz band: Channel 13.
 - In France outdoor operation is only permitted using the 2.457 - 2.472 GHz band: Channels 10 - 13.

Declaration of Conformity in Languages of the European Community

English	Hereby, SMC Networks, declares that this Radio LAN device is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.
Finnish	Valmistaja SMC Networks vakuuttaa täten että Radio LAN device tyyppinen laite on direktiivin 1999/5/EY oleellisten vaatimusten ja sitä koskevien direktiivin muiden ehtojen mukainen.
Dutch	Hierbij verklaart SMC Networks dat het toestel Radio LAN device in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 1999/5/EG Bij deze SMC Networks dat deze Radio LAN device voldoet aan de essentiële eisen en aan de overige relevante bepalingen van Richtlijn 1999/5/EC.
French	Par la présente SMC Networks déclare que l'appareil Radio LAN device est conforme aux exigences essentielles et aux autres dispositions pertinentes de la directive 1999/5/CE
Swedish	Härmed intygar SMC Networks att denna Radio LAN device står i överensstämmelse med de väsentliga egenskapskrav och övriga relevanta bestämmelser som framgår av direktiv 1999/5/EG.
Danish	Undertegnede SMC Networks erklærer herved, at følgende udstyr Radio LAN device overholder de væsentlige krav og øvrige relevante krav i direktiv 1999/5/EF
German	Hiermit erklärt SMC Networks, dass sich dieser/diese/dieses Radio LAN device in Übereinstimmung mit den grundlegenden Anforderungen und den anderen relevanten Vorschriften der Richtlinie 1999/5/EG befindet". (BMW) Hiermit erklärt SMC Networks die Übereinstimmung des Gerätes Radio LAN device mit den grundlegenden Anforderungen und den anderen relevanten Festlegungen der Richtlinie 1999/5/EG. (Wien)
Greek	Με την παρούσα smc networks δηλώνει ότι radio LAN device συμμορφώνεται προς τις ουσιαστικές απαιτήσεις και τις λοιπές σχετικές διατάξεις της οδηγίας 1999/5/εκ

Italian	Con la presente SMC Networks dichiara che questo Radio LAN device è conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 1999/5/CE.
Spanish	Por medio de la presente SMC Networks declara que el Radio LAN device cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 1999/5/CE
Portuguese	SMC Networks declara que este Radio LAN device está conforme com os requisitos essenciais e outras disposições da Directiva 1999/5/CE.

Safety Compliance

Underwriters Laboratories Compliance Statement

Important! Before making connections, make sure you have the correct cord set. Check it (read the label on the cable) against the following:

Operating Voltage	Cord Set Specifications
120 Volts	UL Listed/CSA Certified Cord Set
	Minimum 18 AWG
	Type SVT or SJT three conductor cord
	Maximum length of 15 feet
	Parallel blade, grounding type attachment plug rated 15 A, 125 V
240 Volts (Europe only)	Cord Set with H05VV-F cord having three conductors with minimum diameter of 0.75 mm ²
	IEC-320 receptacle
	Male plug rated 10 A, 250 V

The unit automatically matches the connected input voltage. Therefore, no additional adjustments are necessary when connecting it to any input voltage within the range marked on the power adapter.

Wichtige Sicherheitshinweise (Germany)

1. Bitte lesen Sie diese Hinweise sorgfältig durch.
 2. Heben Sie diese Anleitung für den späteren Gebrauch auf.
 3. Vor jedem Reinigen ist das Gerät vom Stromnetz zu trennen. Verwenden Sie keine Flüssigoder Aerosolreiniger. Am besten eignet sich ein angefeuchtetes Tuch zur Reinigung.
 4. Die Netzanschlusßsteckdose soll nahe dem Gerät angebracht und leicht zugänglich sein.
 5. Das Gerät ist vor Feuchtigkeit zu schützen.
 6. Bei der Aufstellung des Gerätes ist auf sicheren Stand zu achten. Ein Kippen oder Fallen könnte Beschädigungen hervorrufen.
 7. Die Belüftungsöffnungen dienen der Luftzirkulation, die das Gerät vor Überhitzung schützt. Sorgen Sie dafür, daß diese Öffnungen nicht abgedeckt werden.
 8. Beachten Sie beim Anschluß an das Stromnetz die Anschlußwerte.
 9. Verlegen Sie die Netzanschlußleitung so, daß niemand darüber fallen kann. Es sollte auch nichts auf der Leitung abgestellt werden.
 10. Alle Hinweise und Warnungen, die sich am Gerät befinden, sind zu beachten.
 11. Wird das Gerät über einen längeren Zeitraum nicht benutzt, sollten Sie es vom Stromnetz trennen. Somit wird im Falle einer Überspannung eine Beschädigung vermieden.
 12. Durch die Lüftungsöffnungen dürfen niemals Gegenstände oder Flüssigkeiten in das Gerät gelangen. Dies könnte einen Brand bzw. elektrischen Schlag auslösen.
 13. Öffnen sie niemals das Gerät. Das Gerät darf aus Gründen der elektrischen Sicherheit nur von autorisiertem Servicepersonal geöffnet werden.
 14. Wenn folgende Situationen auftreten ist das Gerät vom Stromnetz zu trennen und von einer qualifizierten Servicestelle zu überprüfen:
 - a. Netzkabel oder Netzstecker sind beschädigt.
 - b. Flüssigkeit ist in das Gerät eingedrungen.
 - c. Das Gerät war Feuchtigkeit ausgesetzt.
 - d. Wenn das Gerät nicht der Bedienungsanleitung entsprechend funktioniert oder Sie mit Hilfe dieser Anleitung keine Verbesserung erzielen.
 - e. Das Gerät ist gefallen und/oder das Gehäuse ist beschädigt.
 - f. Wenn das Gerät deutliche Anzeichen eines Defektes aufweist.
 15. Stellen Sie sicher, daß die Stromversorgung dieses Gerätes nach der EN 60950 geprüft ist. Ausgangswerte der Stromversorgung sollten die Werte von AC 7,5-8 V, 50-60 Hz nicht über oder unterschreiten sowie den minimalen Strom von 1 A nicht unterschreiten.
- Der arbeitsplatzbezogene Schalldruckpegel nach DIN 45 635 Teil 1000 beträgt 70 dB(A) oder weniger.

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EZ CONNECT™ 2.4 GHz WIRELESS ETHERNET BRIDGE

Introduction

SMC's EZ Connect 2.4 GHz Wireless Ethernet Bridge (SMC2870W) can function as:

- an Ethernet adapter, providing a wireless connection via an RJ-45 connection to devices such as Microsoft Xbox and Ethernet ready embedded devices
- a standard IEEE 802.11g access point
- a wireless repeater, allowing you to effectively extend the coverage of another SMC2870W that is configured to operate in Access Point mode

This solution offers fast, reliable wireless connectivity with considerable cost savings over wired LANs (eliminates long-term maintenance overhead for cabling). Just install enough wireless access points to cover your network area, plug wireless cards into your notebooks or install wireless adapters into your desktops, and start networking.

Use this device in conjunction with SMC's EZ Connect Wireless Cards to create an instant network that integrates seamlessly with Ethernet LANs. Moreover, moving or expanding your network is as easy as moving or installing additional access points – no wires!

Package Checklist

The EZ Connect 2.4 GHz 802.11g Wireless Ethernet Bridge package includes:

- One EZ Connect 2.4 GHz 802.11g Wireless Ethernet Bridge (SMC2870W)
- One 5 VDC power adapter
- Installation CD containing this User Guide, EZ Installation Wizard, and Utility program
- One RJ-45 cable

Please register this product and upgrade the product warranty on SMC's web site at <http://www.smc.com>

Inform your dealer if there are any incorrect, missing, or damaged parts. If possible, retain the carton, including the original packing materials. Use them again to repack the product in case there is a need to return it.

HARDWARE DESCRIPTION

The Wireless Ethernet Bridge supports 1, 2, 5.5 and 11 Mbps half-duplex connections to Ethernet networks. This device is fully compliant with 2.4 GHz DSSS/OFDM wireless networking as defined in IEEE 802.11b/g. The Wireless Ethernet Bridge is backward compatible with the existing 802.11b WLAN infrastructure. It also can be connected via an RJ-45 connection to devices such as Nintendo GameCube, Microsoft Xbox, Sony PlayStation II, and Ethernet ready embedded devices. It functions as an IEEE 802.11g Access Point or as a Repeater (see “Introduction” on page 1).

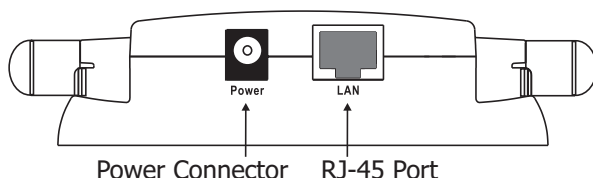


Figure 1. Rear Panel

Item	Description
Power Inlet	Connect the included power adapter to this inlet. Warning: Using the wrong type of power adapter may damage your adapter.
LAN Port	Fast Ethernet port (RJ-45). Connect device (such as a PC, hub or switch) on your local area network to this port.

Note: If you use the RELOAD button at the bottom, the Wireless Ethernet Bridge performs a power reset. If the button is depressed for over 5 seconds, all the LEDs will illuminate and the factory settings will be restored.

Applications

EZ Connect wireless products offer a fast, reliable, cost-effective solution for wireless Ethernet client access to the network in applications such as:

- **Video Game Systems**
Provides wireless Internet access for users of video game systems such as Nintendo GameCube, Microsoft Xbox and Sony PlayStation II
- **Remote access to corporate network information**
Email, file transfer, and terminal emulation
- **Difficult-to-wire environments**
Historical or old buildings, asbestos installations, and open areas where wiring is difficult to employ
- **Frequently changing environments**
Retailers, manufacturers, and banks which frequently rearrange the workplace or change locations
- **Temporary LANs for special projects or peak periods**
Trade shows, exhibitions, and construction sites that need a temporary setup. Retailers, airline, and shipping companies that need additional workstations for peak periods. Auditors who require workgroups at customer sites
- **Access to databases for mobile workers**
Doctors, nurses, retailers, or white-collar workers who need access to databases while being mobile in a hospital, retail store, in an office, or on a campus
- **SOHO users**
SOHO (Small Office and Home Office) users who need easy and quick installation of a small computer network

LED Indicators

The Wireless Ethernet Bridge includes three status LED indicators, as described in the following figure and table.

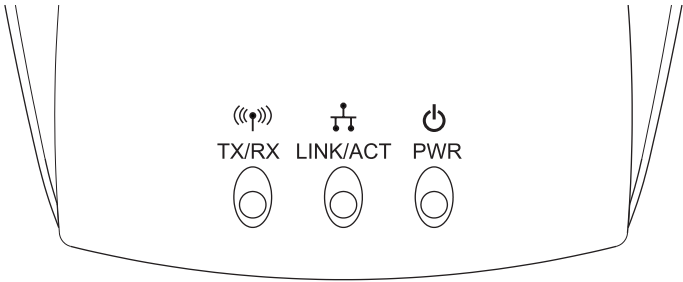


Figure 2. Front Panel

LED		Status	Description
Wireless Link	TX/RX	Flashing (Green)	The device is transmitting or receiving data through wireless links.
Ethernet Status	LINK/ ACT	On (Orange)	The device has established a valid 10 Mbps Ethernet link.
		On (Green)	The device has established a valid 100 Mbps Ethernet link.
		Flashing	The device is transmitting or receiving data on the Ethernet LAN
Power (PWR)		On (Green)	Power is being supplied.

System Requirements

Before you install the Wireless Ethernet Bridge, be sure you have met the following requirements:

- An AC power outlet (100~240 V, 50~60 Hz)
- An available RJ-45 (UTP) port on an Ethernet hub or switch
- 802.11b/g compliant wireless Ethernet adapters with TCP/IP protocols installed
- TCP/IP network protocol installed on each PC that needs to access the Internet
- A web browser, such as Microsoft Internet Explorer 5.5 or above installed on one PC at your site for configuring the Wireless Ethernet Bridge

HARDWARE INSTALLATION

1. Select the site – Choose a location for your Wireless Ethernet Bridge. Usually, the best location is at the center of your wireless coverage area, if possible within line-of-sight of all wireless devices.
2. Place the Wireless Ethernet Bridge in a position that gives it maximum coverage. Normally, the higher you place the antenna, the better the performance.
3. Position the antennas in the desired positions. For more effective coverage, position the antennas along different axes. For example, try positioning the antennas around 45 to 90 degrees apart. **(The antennas emit signals along the toroidal plane – and thus provide more effective coverage when positioned along different axes.)**
4. If used in Client Bridge mode, connect the Ethernet cable to the RJ-45 socket of the device that will communicate over a wireless connection with an access point.
5. If used in Access Point mode, connect the SMC2870W to an Ethernet network device such as a hub or a switch using category 3, 4, or 5 UTP Ethernet cable and an RJ-45 connector.
6. Connect the power adapter cable to the 5 VDC power socket on the rear panel.

Warning: Use only the power adapter supplied with the SMC2870W.

SYSTEM CONFIGURATION

The SMC2870W is a Plug-and-Play device. This means that, in most cases, you will not need to configure it.

The SMC2870W Wireless Ethernet Bridge includes an SNMP agent that is accessible through an SNMP manager application (Refer to “Using the Configuration Utility” on page 11.) The latest version may be downloaded from the SMC web site specified on the back cover of this manual.

The SMC2870W can be configured by a web browser, specifically Internet Explorer 5.5 or above. Using the web management interface, you can configure the Wireless Ethernet Bridge and view statistics to monitor network activity.

Before you attempt to log into the SMC2870W's web-based administration, please verify the following.

1. Your browser is configured properly (see below).
2. Disable any firewall or security software that may be running.
3. Confirm that you have a good link LED where your computer is plugged into the Wireless Ethernet Bridge. If you don't have a link light – then try another cable to get a good link.
4. To access the Internet through the Wireless Ethernet Bridge, you must configure the network settings of the computers on your LAN to use the same IP subnet as the Wireless Ethernet Bridge. The default network settings for the Wireless Ethernet Bridge are:

SMC2870W IP Address: 192.168.2.25

Subnet Mask: 255.255.255.0

EZ INSTALLATION WIZARD

To configure your SMC2870W, first verify that your computer has an IP address in the same subnet as the SMC2870W. If you are not familiar with this procedure, see the “Using IPCONFIG” section below.

Note: The default IP address of the SMC2870W is 192.168.2.25.

1. Insert the SMC EZ Installation Wizard & Documentation CD into your CD-ROM drive.
2. The EZ Installation Wizard will appear. Click “Configuration Utility” to begin the utility installation and setup process.

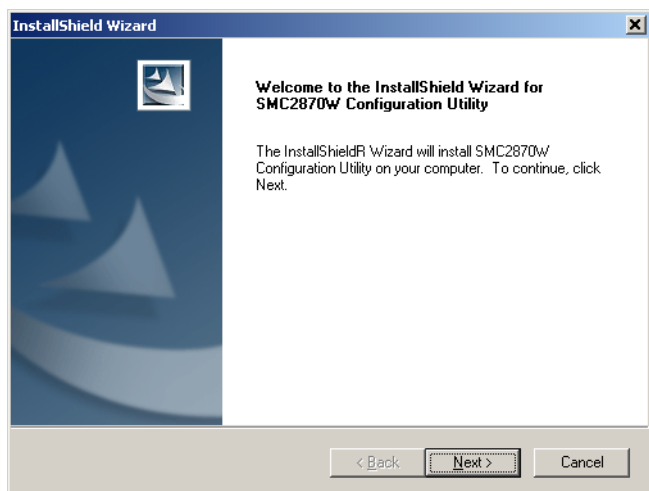
Using IPCONFIG

1. Click the “Start” button, click “Run” and type “command.”
2. Press “OK” and a DOS command prompt will appear.
3. Type “ipconfig” and press enter.
4. Verify that your IP address is 192.168.2.xxx. If so, you can now use the SMC EZ Installation Wizard to configure your SMC2870W. If your IP subnet is different, please go to the “Configuring Your IP Address” on page 23.

UTILITY INSTALLATION AND CONFIGURATION

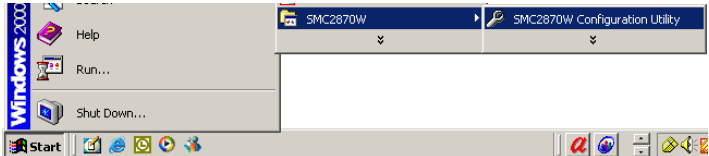
Note: This Configuration Utility is for Windows 98SE, Me, 2000, and XP.

After clicking “Configuration Utility,” follow the on-screen instructions to install the utility program.



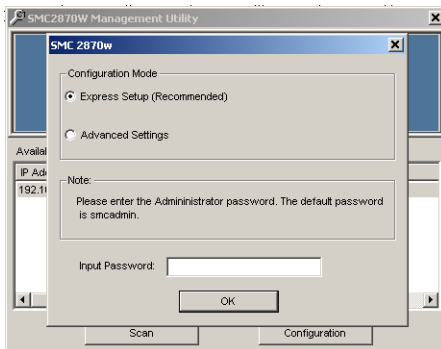
Using the Configuration Utility

1. Click Start/Programs/SMC2870W/SMC2870W Configuration Utility.



2. The program will automatically scan for SMC2870W access points on the network. If you want to subsequently detect all access points on the network, click the Scan button. From the list of detected SMC2870Ws, double-click on the IP address of the unit you wish to configure. A dialogue box will prompt you for the login password.

Note: Clicking the SMC logo on the screen takes you to the SMC web site (www.smc.com) for the latest firmware download.

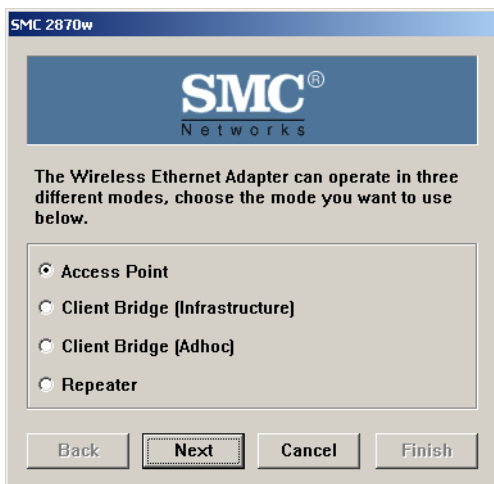


3. Enter the default password: smcadmin and click OK.

Utility Configuration

Operation Mode

Select the connection mode for SMC2870W and click Next.
(Default: Access Point)



Network Settings

The following screen allows you to set up the IP settings of the SMC2870W.

SMC 2870w

SMC[®]
Networks

Network Settings

☐ Enable DHCP
 ☒ Use Static IP

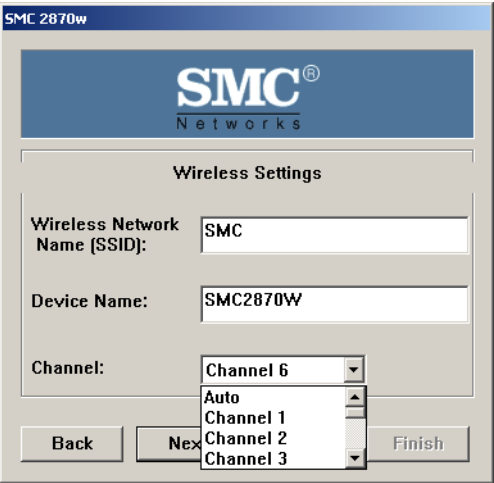
IP Address:

Subnet Mask:

Menu	Description
DHCP Client	You can enable the DHCP Client function to automatically get an IP Address, Subnet Mask, and Default Gateway from a DHCP server in your network. (Default: Use Static IP)
IP address	Set the IP address for SMC2870W as required. (Default: 192.168.2.25)
Subnet mask	Set the Subnet Mask as required. (Default: 255.255.255.0)

Wireless Settings

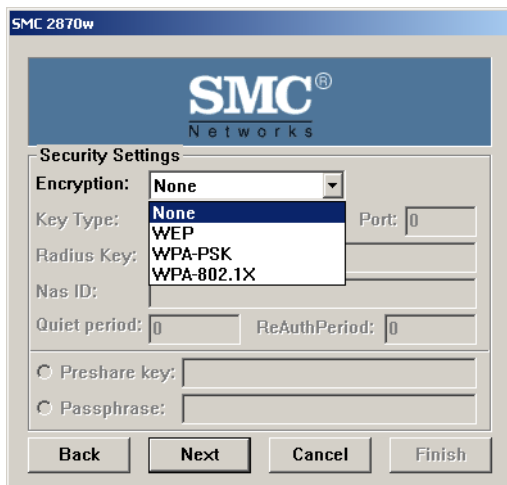
The Wireless Settings page allows you to set up the wireless configurations.



Menu	Description
Wireless Settings	
Wireless Network Name (SSID)	All wireless clients and the wireless access points within a specific ESS (Extended Service Set) must be configured with the same SSID. (Default: SMC)
Device Name	The name of the wireless access point. (Default: SMC2870W)
Channel	Set the operating radio channel. (Default: Channel 6) Note: Available channel settings are limited by local regulations which determine the available channels.

Security

The Security screen provides you with a versatile encryption method to prevent unauthorized access to your wireless network and provide more secure data transmissions.



The image shows a screenshot of the 'Security Settings' window for an SMC 2870w device. The window has a title bar that says 'SMC 2870w'. Below the title bar is a blue header with the 'SMC Networks' logo. The main area is titled 'Security Settings' and contains several fields and options. The 'Encryption' dropdown menu is open, showing options: 'None' (selected), 'WEP', 'WPA-PSK', and 'WPA-802.1X'. Other fields include 'Key Type' (set to 'None'), 'Port' (set to '0'), 'Radius Key', 'Nas ID', 'Quiet period' (set to '0'), and 'ReAuthPeriod' (set to '0'). At the bottom, there are two radio buttons: 'Preshare key' and 'Passphrase', both of which are unselected. Below these are four buttons: 'Back', 'Next', 'Cancel', and 'Finish'.

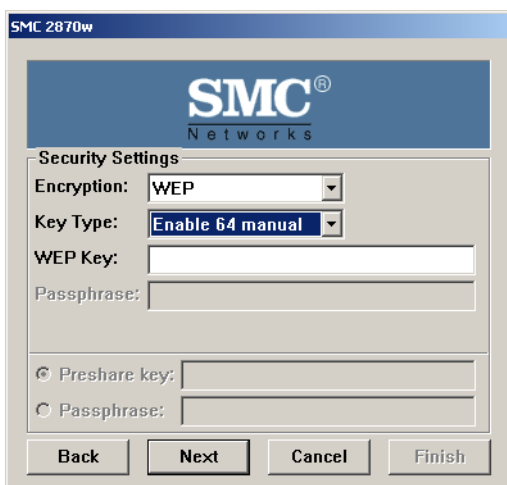
If you are transmitting sensitive data across wireless channels, you should enable Wi-Fi Protected Access (WPA) or Wired Equivalent Privacy (WEP) encryption. Encryption security requires you to use the same protocol set (WPA or WEP) and encryption/decryption keys for the Wireless Ethernet Bridge and all of your wireless clients.

The security mechanisms that may be employed depend on the level of security required, the network and management resources available, and the software support provided on wireless clients. A summary of wireless security considerations is listed in the following table.

Security Mechanism	Client Support	Implementation Considerations
WEP	Built-in support on all 802.11b and 802.11g devices	• Provides only weak security • Requires manual key management
WPA mode	Requires WPA-enabled system and network card driver (native support provided in Windows XP)	• Provides good security in small networks • Requires configured RADIUS server, or manual management of pre-shared key
	<i>802.1x mode</i> Requires WPA-enabled system and network card driver (native support provided in Windows XP)	• Provides robust security in WPA-only mode (i.e., WPA clients only) • Requires configured RADIUS server • 802.1x Extensible Authentication Protocol (EAP) type may require management of digital certificates for clients and server

WEP Encryption Type

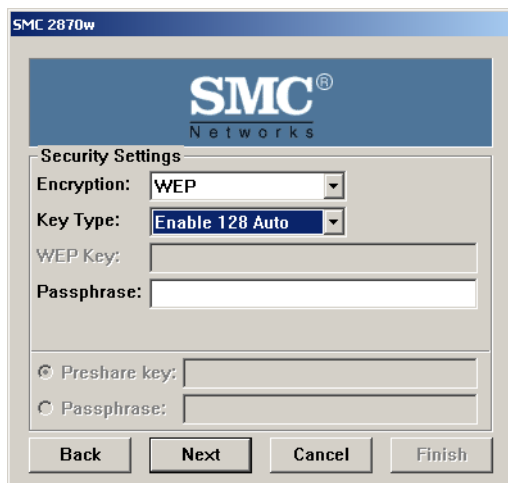
You can choose between standard 64-bit or the more robust 128-bit encryption. To manually configure the keys, select the WEP encryption type option from the drop down menu. For 64-bit encryption enter 5 hexadecimal pairs for each key. For 128-bit encryption enter 13 hexadecimal pairs for each key.



The image shows a Windows-style dialog box titled "SMC 2870w". The main header area is blue with the "SMC Networks" logo. Below this, the "Security Settings" section contains the following controls:

- Encryption:** A dropdown menu currently showing "WEP".
- Key Type:** A dropdown menu currently showing "Enable 64 manual".
- WEP Key:** A text input field.
- Passphrase:** A text input field.
- A section with two radio buttons:
 - ☒ **Preshare key:** followed by a text input field.
 - ☐ **Passphrase:** followed by a text input field.

At the bottom of the dialog are four buttons: "Back", "Next", "Cancel", and "Finish".



The image shows a Windows-style dialog box titled "SMC 2870w". The header bar is blue with the "SMC Networks" logo in white. Below the header, the "Security Settings" section contains several fields and options. "Encryption:" is a dropdown menu set to "WEP". "Key Type:" is a dropdown menu set to "Enable 128 Auto". Below these are empty text boxes for "WEP Key:" and "Passphrase:". At the bottom of the settings area, there are two radio button options: "Preshare key:" (which is selected) and "Passphrase:". At the very bottom of the dialog are four buttons: "Back", "Next", "Cancel", and "Finish".

SMC 2870w

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Networks

Security Settings

Encryption: WEP

Key Type: Enable 128 Auto

WEP Key:

Passphrase:

☒ Preshare key:

☐ Passphrase:

Back Next Cancel Finish

To generate the keys automatically, enter the Passphrase in the provided field. If you use encryption, configure the same keys used for the Wireless Ethernet Bridge on each of your wireless clients. Note that Wired Equivalent Privacy (WEP) protects data transmitted between wireless nodes, but does not protect any transmissions over your wired network or over the Internet.

WPA-PSK Encryption Type

SMC 2870w

SMC® Networks

Security Settings

Encryption: **WPA-PSK**

Key Type: 0 . 0 . 0 . 0 Port: 1812

Radius Key:

Nas ID:

Quiet period: 60 ReAuthPeriod: 3600

☒ Preshare key:

☐ Passphrase:

Back Next Cancel Finish

WPA is a stronger wireless security solution than WEP. It uses a combination of authentication and broadcast/session keys.

- Pre-Shared Key/Passphrase

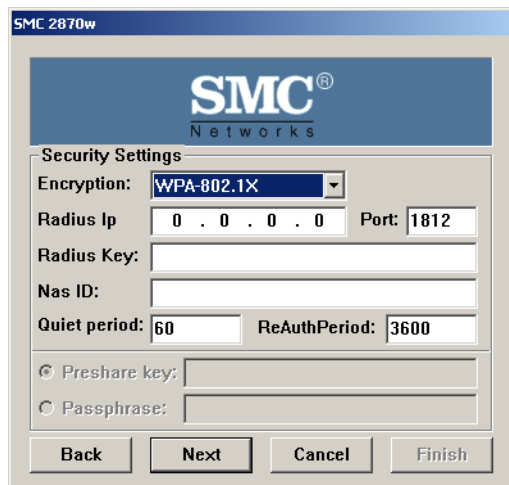
If there is no authentication server on your SOHO network, you can issue the Pre-Shared Key to the clients that connect to the Wireless Ethernet Bridge. Be sure to use the same key for the Wireless Ethernet Bridge and the connected clients.

Notes: 1. Manual Pre-Shared Key supports up to 64-Hex characters.

2. Type 8~63 Hex characters for the Pre-Shared Passphrase.

3. Do not use a key that is long and complex for your clients to type accurately, as you might forget it.
4. A Hex (hexadecimal) digit is a number or letter in the range 0-9 or A-F.

WPA-802.1X Encryption Type

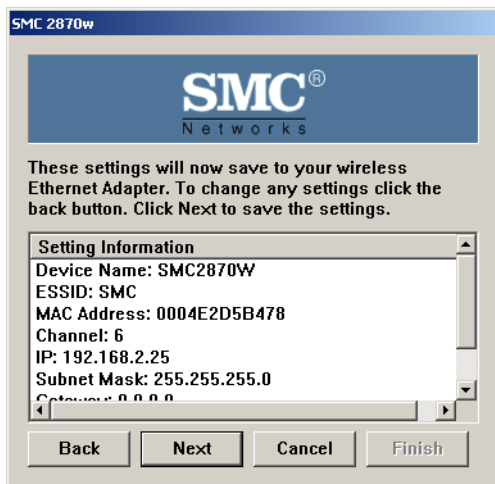


The screenshot shows the 'Security Settings' window for SMC Networks. The 'Encryption' dropdown is set to 'WPA-802.1X'. The 'Radius Ip' field contains '0 . 0 . 0 . 0' and the 'Port' field contains '1812'. The 'Radius Key' and 'Nas ID' fields are empty. The 'Quiet period' is set to '60' and the 'ReAuthPeriod' is set to '3600'. There are two radio buttons at the bottom: 'Preshare key' (selected) and 'Passphrase'. At the bottom of the window are four buttons: 'Back', 'Next', 'Cancel', and 'Finish'.

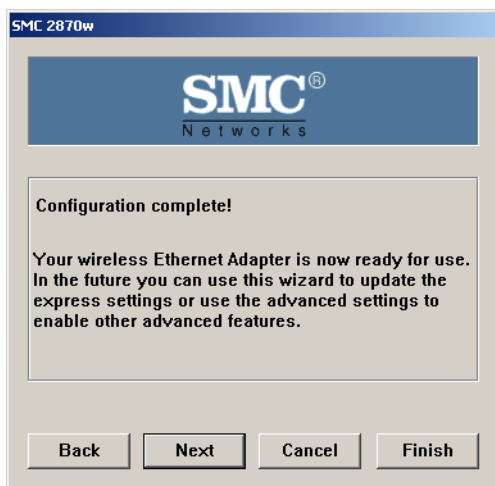
The Wireless Ethernet Bridge allows you to use 802.1x authentication for an enterprise network environment with a RADIUS server installed. In 802.1x mode, access will be checked against the authentication database stored on the Wireless Ethernet Bridge. You must specify the authentication period, and the corresponding parameters in the RADIUS Server Parameters field for the remote authentication protocol.

Setting Information

The next screen displays system information.

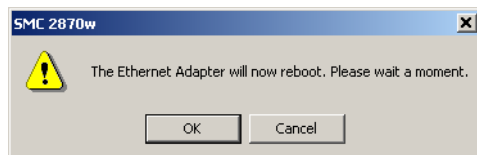


Click Next and Finish to complete the SMC2870W configuration.



UTILITY INSTALLATION AND CONFIGURATION

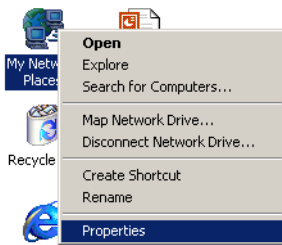
Press OK and reboot the Wireless Ethernet Bridge when prompted to do so.



CONFIGURING YOUR IP ADDRESS

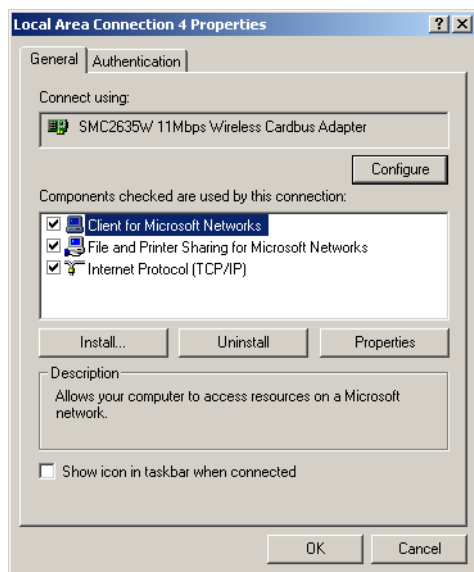
Windows 2000

1. Right-click the “Network Places” icon on your desktop and click “Properties.”

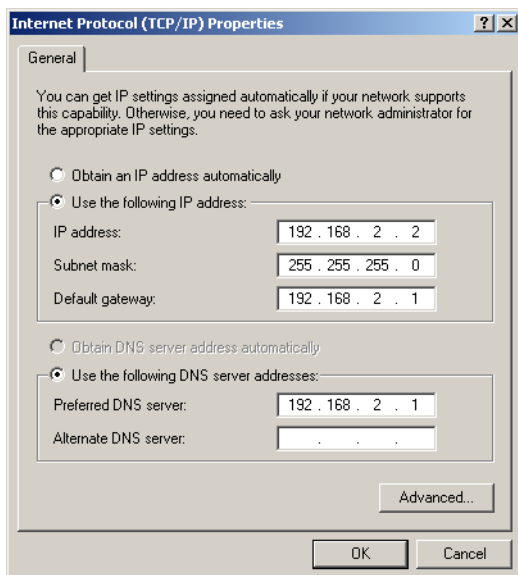


CONFIGURING YOUR IP ADDRESS

2. Right-click your Local Area Connection and click “Properties.”



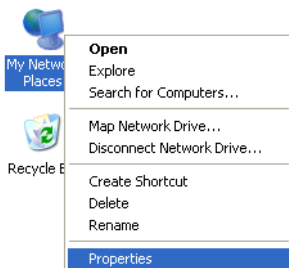
3. Click “Internet Protocol TCP/IP” and click “Properties.” Select the “Use the following IP Address” option and insert 192.168.2.x (where x is 2 ~ 24, 26 ~ 254). Specify the default gateway and DNS server as indicated by your network administrator or Internet Service Provider.



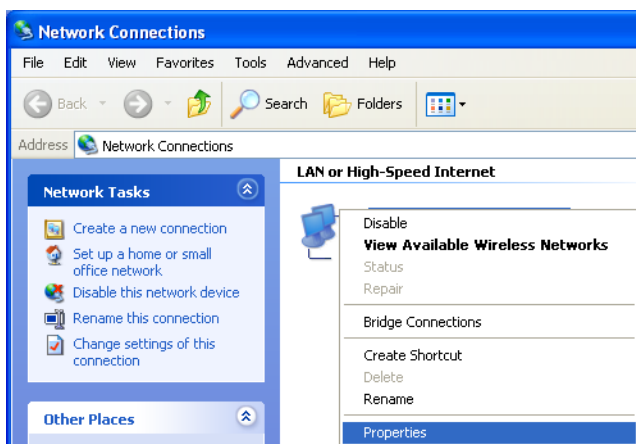
4. Click “OK” and click “Close” to continue and save the changes.

Windows XP

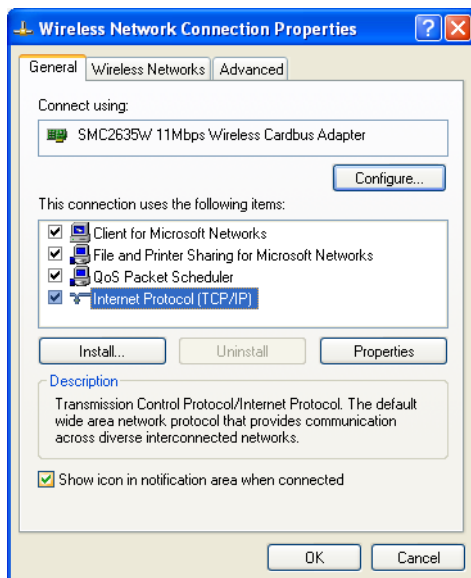
1. Right-click the “Network Places” icon on your desktop and click “Properties.”



2. Right-click your “Local Area Connection” and click “Properties.”

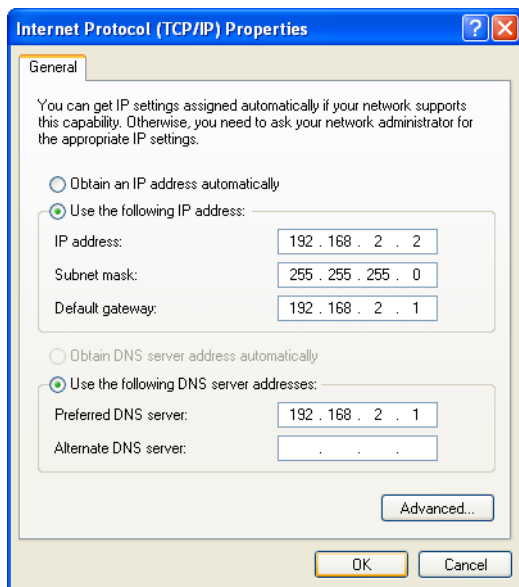


3. Click “Internet Protocol TCP/IP” and click “Properties.”



CONFIGURING YOUR IP ADDRESS

4. Select the “Use the following IP Address” option and insert 192.168.2.x (where x is 2 ~ 24, 26 ~ 254) for the IP address. Specify the default gateway and DNS server as indicated by your network administrator or Internet Service Provider.



5. Click “OK” and click “Close” to continue and save the changes.

WEB MANAGEMENT

Browser Configuration

Confirm that your browser is configured for a direct connection to the Internet using the Ethernet cable that is installed in the computer.

Disable Proxy Connection

You will also need to verify that the HTTP Proxy feature of your web browser is disabled. This is so that your web browser will be able to view the SMC2870W configuration pages. The following steps are for Internet Explorer. Determine which browser you use and follow the appropriate steps.

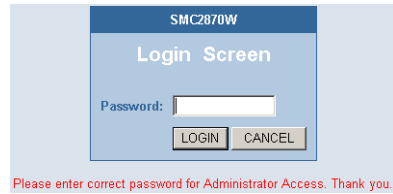
Internet Explorer (5.5 or above) in Microsoft Windows

1. Open Internet Explorer. Click Tools, and then select Internet Options.
2. In the Internet Options window, click the Connections tab.
3. Click the LAN Settings button.
4. Clear all the check boxes and click OK to save these LAN settings changes.
5. Click OK again to close the Internet Options window.

Internet Explorer in Macintosh

1. Open Internet Explorer. Click Explorer/Preferences.
2. In the Internet/Explorer/Preferences window, under Network, select Proxies.
3. Uncheck all check boxes and click OK.

To access the SMC2870W's management interface, enter the Wireless Ethernet Bridge IP address in your web browser **http://192.168.2.25**. Then enter the password and click LOGIN. (Default password: smcadmin)



The home page displays the Setup options.

Navigating the Web Browser Interface

The SMC2870W's web management interface features a user-friendly setup interface. This configuration UI supports advanced functions like password setting, LAN IP setting, wireless security configuration, MAC address filtering, firmware upgrade, and other advanced functions.

Making Configuration Changes

Configurable parameters have a dialog box or a drop-down list. Once a configuration change has been made on a page, be sure to click the APPLY or REFRESH button at the bottom of the page to enable the new setting.

Note: To ensure proper screen refresh after a command entry, ensure that Internet Explorer 5.5 is configured as follows: Under the menu Tools/Internet Options/General/Temporary Internet Files/Settings, the setting for "Check for newer versions of stored pages" should be "Every visit to the page."

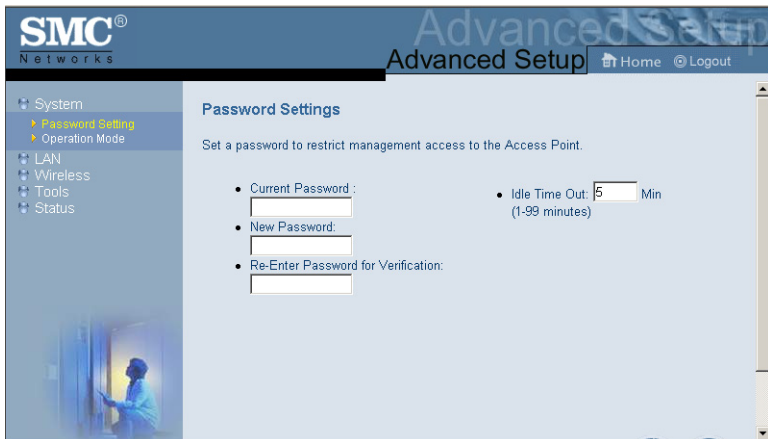
NAVIGATING THE WEB BROWSER INTERFACE

Use the web management interface to define system parameters, manage and control the Wireless Ethernet Bridge and its ports, or monitor network conditions. The following table outlines the selections available from this program.

Menu	Description
System	Sets the password for administrator access, and the network operation mode
LAN	Sets the TCP/IP configuration of the Wireless Ethernet Bridge's LAN interface and DHCP setup
Wireless	Configures the wireless channel, SSID, and security encryption for wireless communications Controls access to your network clients based on the MAC (Media Access Control) address of the client machine
Tools	Contains options to backup and restore the current configuration, restore all configuration settings to the factory defaults, update system firmware, or reset the system Displays WAN and Ethernet traffic statistics
Status	Displays WAN/LAN connection status, firmware, and hardware version numbers

System

Password Settings



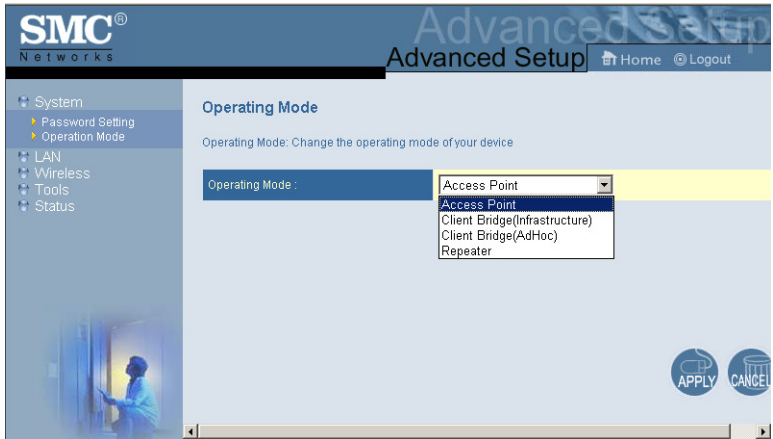
The screenshot shows the SMC Networks Advanced Setup web interface. The top navigation bar includes the SMC Networks logo, the title 'Advanced Setup', and links for 'Home' and 'Logout'. A left sidebar menu contains 'System' (with sub-items 'Password Setting' and 'Operation Mode'), 'LAN', 'Wireless', 'Tools', and 'Status'. The main content area is titled 'Password Settings' and contains the instruction: 'Set a password to restrict management access to the Access Point.' Below this, there are three password-related settings: 'Current Password' with an input field, 'New Password' with an input field, and 'Re-Enter Password for Verification' with an input field. To the right of these, there is an 'Idle Time Out' setting with a dropdown menu showing '5' and the unit 'Min (1-99 minutes)'.

Use this menu to restrict access based on a password.
(Default: smcadmin). For security reasons, you should change the default password before exposing the SMC2870W to the Internet.

Passwords can contain from 3 to 12 alphanumeric characters and are not case-sensitive.

Enter a maximum Idle Time Out (in minutes) to define a maximum period of time for which the login session is maintained during inactivity. If the connection is inactive for longer than the maximum idle time, it will be logged out, and you have to log in to the web management system again. (Default: 5 minutes)

Operation Mode



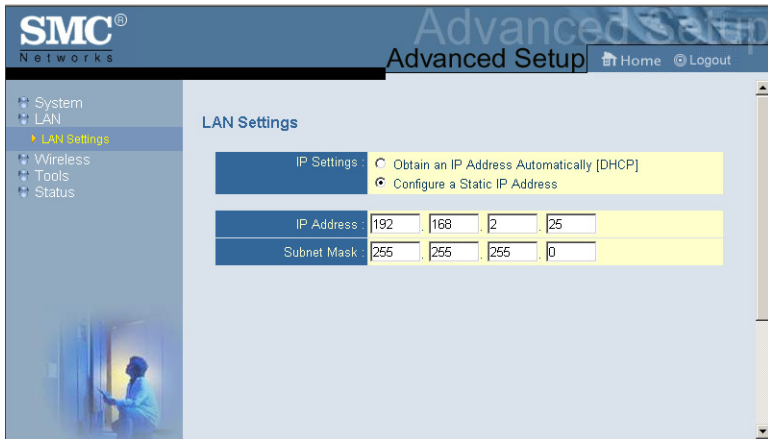
This may be set to Access Point, Client Bridge (Infrastructure, AdHoc), or Repeater. (Default: Access Point)

Note: After you choose the operation mode for the SMC2870W, be sure to click the APPLY button, and click OK on the confirmation message to enable the new setting.

These modes are described below:

- Access Point – functions as a standard IEEE 802.11g access point
- Client Bridge (Infrastructure, AdHoc) – provides a wireless connection to devices such as Microsoft Xbox and Ethernet ready embedded devices
- Reapter – repeats data from another SMC2870W that is configured in Access Point mode

LAN



The screenshot displays the 'Advanced Setup' interface for SMC Networks. On the left, a navigation menu includes 'System', 'LAN', 'Wireless', 'Tools', and 'Status', with 'LAN Settings' highlighted. The main content area is titled 'LAN Settings' and contains two sections. The first section, 'IP Settings', has two radio buttons: 'Obtain an IP Address Automatically [DHCP]' (which is selected) and 'Configure a Static IP Address'. The second section contains input fields for 'IP Address' and 'Subnet Mask'. The IP Address fields are pre-filled with '192', '168', '2', and '25'. The Subnet Mask fields are pre-filled with '255', '255', '255', and '0'.

IP Address	192	168	2	25
Subnet Mask	255	255	255	0

With “Obtain an IP Address Automatically [DHCP]” enabled, the IP address, subnet mask and default gateway can be dynamically assigned to the SMC2870W by the network DHCP server.

Note: If there is no DHCP server on your network, then the SMC2870W will automatically start up with its default IP address, 192.168.2.25.

The SMC2870W does not provide DHCP service. It simply passes client DHCP requests through to the DHCP server to obtain an IP Address.

If your Internet Service Provider has assigned a fixed IP address, select “Configure a Static IP Address.” Enter the assigned address and subnet mask for the SMC2870W. Then enter the gateway address of your ISP.

You may need a fixed address if you want to provide Internet services, such as a web server or FTP server.

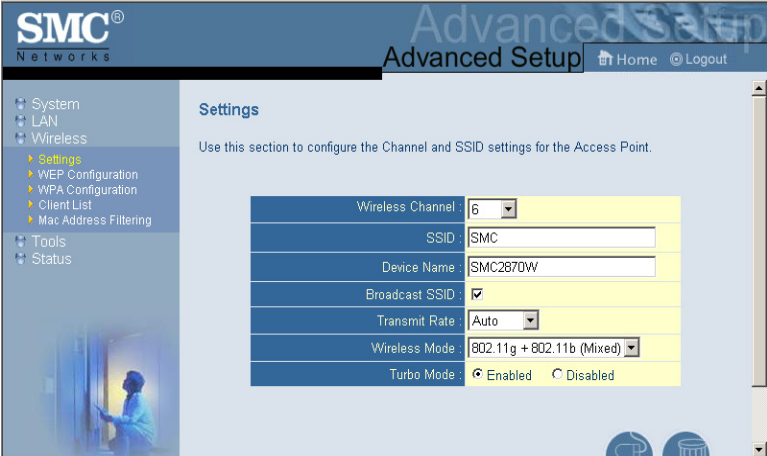
Wireless

Settings

To configure the SMC2870W as an Client Bridge, all you need to do is define the radio channel, the Service Set Identifier (SSID), and encryption options.

In Client Bridge mode or Repeater mode, the radio channel and SSID (Service Set ID) of the SMC2870W must be set to the same values as those of the access point with which they are associated.

If the SMC2870W is in Access Point mode, you must specify a common radio channel and SSID (Service Set ID) to be used by the Wireless Ethernet Bridge and all of your wireless clients. Be sure you configure all of your clients to the same values.



The screenshot shows the SMC Networks Advanced Setup web interface. The left sidebar contains a navigation menu with options: System, LAN, Wireless, Settings (highlighted), WEP Configuration, WPA Configuration, Client List, Mac Address Filtering, Tools, and Status. The main content area is titled 'Settings' and includes a sub-header 'Advanced Setup' with 'Home' and 'Logout' links. Below the title, a message states: 'Use this section to configure the Channel and SSID settings for the Access Point.' The configuration table is as follows:

Wireless Channel :	6
SSID :	SMC
Device Name :	SMC2870W
Broadcast SSID :	☒
Transmit Rate :	Auto
Wireless Mode :	802.11g + 802.11b (Mixed)
Turbo Mode :	☒ Enabled ☐ Disabled

Menu	Description
Wireless Channel	The radio channel through which a wireless access point communicates with PCs in its BSS. (Default: 6) The available channel settings are limited by local regulations which determine the number of channels that are available. • USA: 1 ~ 11 channels • Europe: 1 ~ 13 channels • Japan: 1 ~ 14 channels
SSID	All wireless clients and the wireless access points within a specific ESS must be configured with the same SSID. (Default: SMC)
Device Name	The name of the wireless device. (Default: SMC2870W)
Broadcast SSID	Broadcast the SSID on the wireless network for easy connection with client PCs. (Default: Enable)
Transmit Rate	Set the data rate transmitted from the SMC2870W. As the wireless client moves further away from the Wireless Ethernet Bridge, then the wireless data rate reduces. The transmit data rate from the Wireless Ethernet Bridge can be fixed or set to Auto. (Default: Auto)
Wireless Mode	Set the communication mode for the Wireless Ethernet Bridge. (Default: 802.11g + 802.11b (Mixed)) The 802.11g + 802.11b (Mixed) is an enhanced operation mode. It provides a long range wireless connectivity of 328 feet associated with the IEEE 802.11b standards by offering faster speeds and longer distances from a wireless access point to a wireless PC card
Turbo Mode	Capable of Packet Bursting, FastFrames, Compression, and Dynamic Turbo. This setting is backwards compatible with non-Turbo (legacy) devices. Turbo mode is only enabled when all devices on the wireless network are also Turbo enabled.

WEP Configuration



If you are transmitting sensitive data across wireless channels, you should enable Wired Equivalent Privacy (WEP) encryption.

Encryption requires you to use the same set of encryption/decryption keys for a wireless access point and all of its wireless clients. The SMC2870W supports shared key encryption with key lengths of the 64-bit standard and 128-bit industry standard. The bit key must be in hexadecimal.
(0~9, A~F, e.g., D7 0A 9C 7F E5.)

64-Bit Manual Entry

Key 1~4 - Each Key ID contains 10 HEX digits.

128-Bit Manual Entry

Key ID contains 26 HEX digits.

WEP Mode :		64-bit manually					
Key 1 :	00	00	00	00	00	00	(5 hex digit pairs)
Key 2 :	00	00	00	00	00	00	(5 hex digit pairs)
Key 3 :	00	00	00	00	00	00	(5 hex digit pairs)
Key 4 :	00	00	00	00	00	00	(5 hex digit pairs)

WEP Mode :		64-bit automatically					
PassPhrase :							
Key :	☒ Key1 ☐ Key2 ☐ Key3 ☐ Key4						
Key1 :	*****						
Key2 :	*****						
Key3 :	*****						
Key4 :	*****						

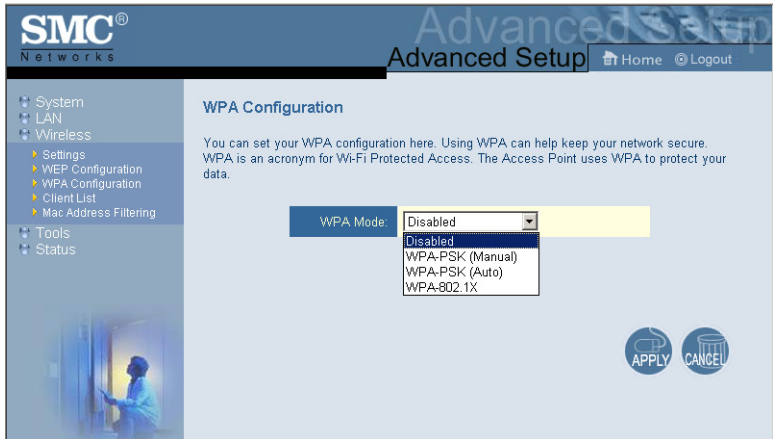
WEP Mode :		128-bit manually					
Key :	00	00	00	00	00	00	(13 hex digit pairs)
	00	00	00	00	00	00	
	00	00	00	00	00	00	

WEP Mode :		128-bit automatically					
PassPhrase :							
Key : *****							

You may automatically generate encryption keys or manually enter the keys. For automatic 64-bit security, enter a passphrase. Four keys will be generated (as shown above). Choose a key from the four generated keys. Automatic 128-bit security generates a single passphrase.

Note that Wired Equivalent Privacy (WEP) protects data transmitted between wireless nodes, but does not protect any transmissions over your wired network or over the Internet.

WPA Configuration



WPA is a stronger wireless security solution than WEP. It uses a combination of authentication and broadcast/session keys.

- Pre-Shared Key/Passphrase

If there is no authentication server on your SOHO network, you can issue the Pre-Shared Key to the clients that connect to the Wireless Ethernet Bridge. Be sure to use the same key for the Wireless Ethernet Bridge and the connected clients.

WPA Mode:	WPA-PSK (Manual)
Preshared Key :	00 00 00 00 00
	00 00 00 00 00
	00 00 00 00 00
	00 00 00 00 00
	00 00 00 00 00
	00 00 00 00 00
	00 00

WPA Mode:	WPA-PSK (Auto)
Passphrase :	

Notes: 1. Manual Pre-Shared Key supports up to 64-Hex characters.

2. Type 8~63 Hex characters for the Pre-Shared Passphrase.

3. Do not use a key that is long and complex for your clients to type accurately, as you might forget it.
4. A Hex (hexadecimal) digit is a number or letter in the range 0-9 or A-F.

- 802.1X Mode

WPA Mode:	WPA-802.1X
RADIUS Server:	0 0 0 0
RADIUS Port:	1812
RADIUS Key:	
NAS ID:	
Idle Time:	0
Reauthentication Period:	3600
Quiet Period:	60

The Wireless Ethernet Bridge allows you to use 802.1x authentication for an enterprise network environment with a RADIUS server installed. In 802.1x mode, access will be checked against the authentication database stored on the Wireless Ethernet Bridge. You must specify the authentication period, and the corresponding parameters in the RADIUS Server Parameters field for the remote authentication protocol.

Client List

SMC®
Networks

Advanced Setup

Home Logout

System

LAN

Wireless

Settings

WEP Configuration

WPA Configuration

Client List

Mac Address Filtering

Tools

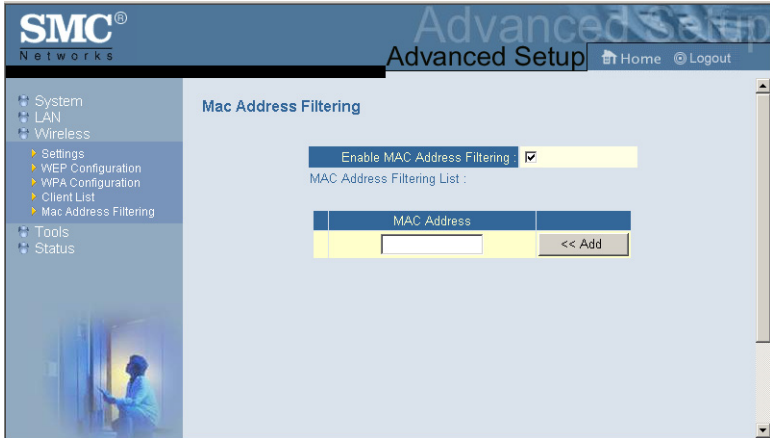
Status

Client List

Mac Address	Client Type
00-30-f1-91-91-22	11 Mbps

The Client List screen displays the MAC address and network speed of the associated clients.

MAC Address Filtering

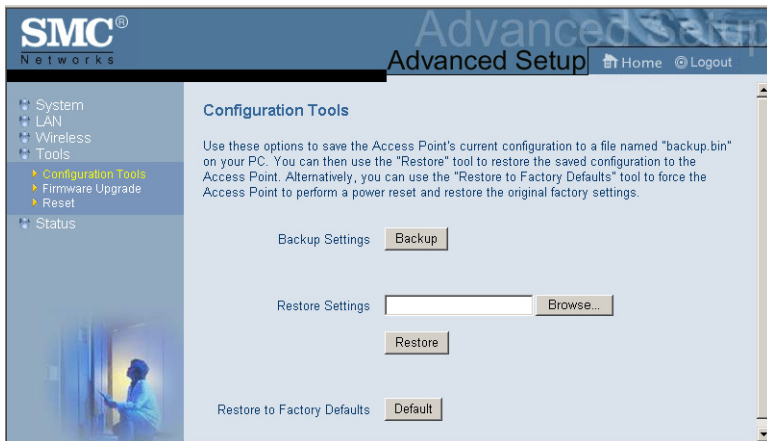


The MAC Address Filtering feature of the SMC2870W allows you to control access to your network clients based on the MAC (Media Access Control) Address of the client machine. This ID is unique to each network adapter. If MAC address filtering is enabled, then the MAC address for each client must be listed in the table to allow access to the network. (Default: disabled)

Tools

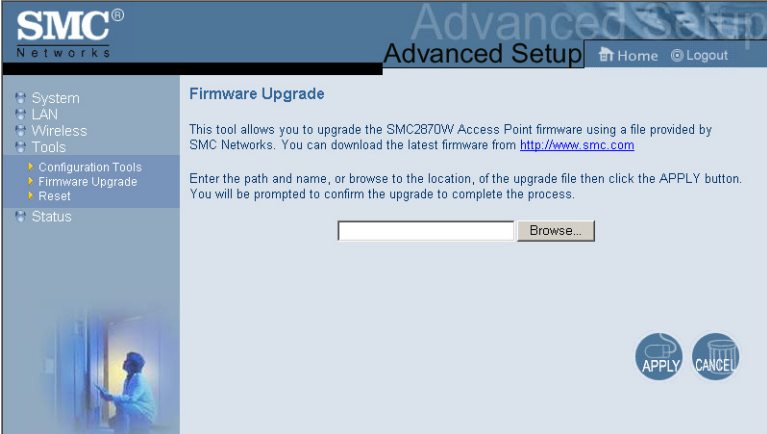
Use the Tools menu to back up the current configuration, restore a previously saved configuration, restore factory settings, update firmware, and reset the SMC2870W.

Configuration Tools



- Backup Settings – Saves the SMC2870W's configuration to a file.
- Restore Settings – Restores settings from a saved backup configuration file.
- Restore to Factory Defaults – Restores the SMC2870W settings back to the original factory defaults.

Firmware Upgrade



The screenshot shows the SMC Networks Advanced Setup interface. The top header includes the SMC Networks logo and the title 'Advanced Setup'. A navigation bar contains 'Home' and 'Logout' links. A left sidebar lists menu items: System, LAN, Wireless, Tools, Configuration Tools (with sub-items Firmware Upgrade and Reset), and Status. The main content area is titled 'Firmware Upgrade' and contains the following text: 'This tool allows you to upgrade the SMC2870W Access Point firmware using a file provided by SMC Networks. You can download the latest firmware from <http://www.smc.com>.' Below this, it says: 'Enter the path and name, or browse to the location, of the upgrade file then click the APPLY button. You will be prompted to confirm the upgrade to complete the process.' There is a text input field followed by a 'Browse...' button. At the bottom right of the main area are two circular buttons labeled 'APPLY' and 'CANCEL'. A small image of a person at a computer is visible in the bottom left corner of the sidebar area.

Use this screen to update the firmware or user interface to the latest version. Download the upgrade file from the web site and save it to your hard drive. Click Browse to look for the previously downloaded file. Click APPLY.

Check the Status page Information section to confirm that the upgrade process was successful.

Reset



Click APPLY to reset the SMC2870W. Your settings will not be changed. The reset will be complete when the power LED is lit red.

Status



SMC® Networks Advanced Setup | Home | Logout

Status

Use this Status section to view connection status, firmware and hardware version numbers, network activity, and information on all clients connected to the Access Point.

Current Time : 1/20/2005 2:40:31 pm

Version Info	LAN Settings	Wireless
Firmware: 1.00.11	IP Address: 192.168.2.25	SSID: SMC
Boot version: 1.00.02	Subnet Mask: 255.255.255.0	AP Name: SMC2870W
Wireless version: V1.0.2.1	Configuration: Static IP	AP Mode: Access Point
Hardware: 01	MAC Address: 00-04-E2-D5-B4-78	Wireless Channel: 6
Serial No: A450009824		Encryption: Disabled

The Status screen displays WAN/LAN connection status, firmware, and hardware version numbers of the SMC2870W.

NETWORK CONFIGURATION AND PLANNING

The Wireless Solution supports a stand-alone wireless network configuration, as well as an integrated configuration with 10 Mbps Ethernet LANs. For a list of the maximum distances between the AP/Bridge and wireless clients, refer to page 53.

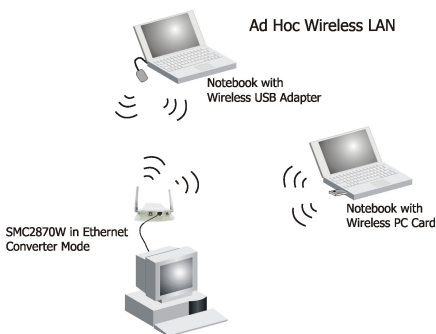
The wireless network cards and adapters can be configured as:

- Ad hoc – for small departmental or SOHO LANs
- Infrastructure – for enterprise LANs

Network Topologies

Ad Hoc Wireless LAN

An ad hoc wireless LAN consists of a group of computers, each equipped with a wireless adapter or SMC2870W Client Bridge, connected via radio signals as an independent wireless LAN. Computers in a specific ad hoc wireless LAN must be configured to the same radio channel.



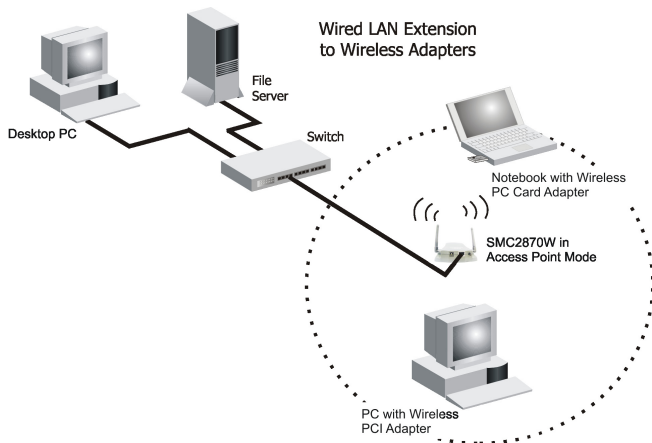
An ad hoc wireless LAN can be used for a small branch office or SOHO operation.

Infrastructure Wireless LAN

An integrated wired and wireless LAN is called an infrastructure configuration. A Basic Service Set (BSS) consists of a group of wireless PC users, and an access point that is directly connected to the wired LAN. Each wireless PC in this BSS can talk to any computer in its wireless group via a radio link, or access other computers or network resources in the wired LAN infrastructure via the access point.

The infrastructure configuration permits wireless clients to access the wired LAN and also increases the effective wireless transmission range for wireless clients as their signal can be passed through multiple access points.

A wireless infrastructure can be used for access to a central database, or for connection between mobile workers, as shown in the following figure.

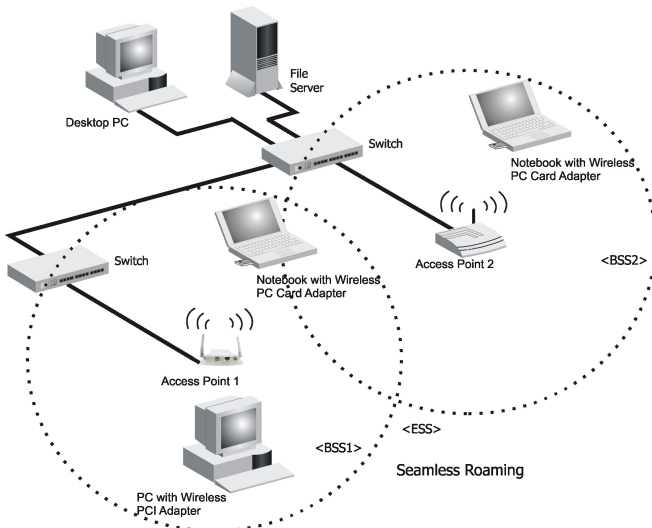


Infrastructure Wireless LAN for Roaming Wireless PCs

The Basic Service Set (BSS) is the communications domain for each wireless access point. For wireless PCs that do not need to support roaming, set the domain identifier (SSID) of the wireless card to the SSID of the access point to which you want to connect. Check with your administrator for the SSID of the access point to which he wants you to connect.

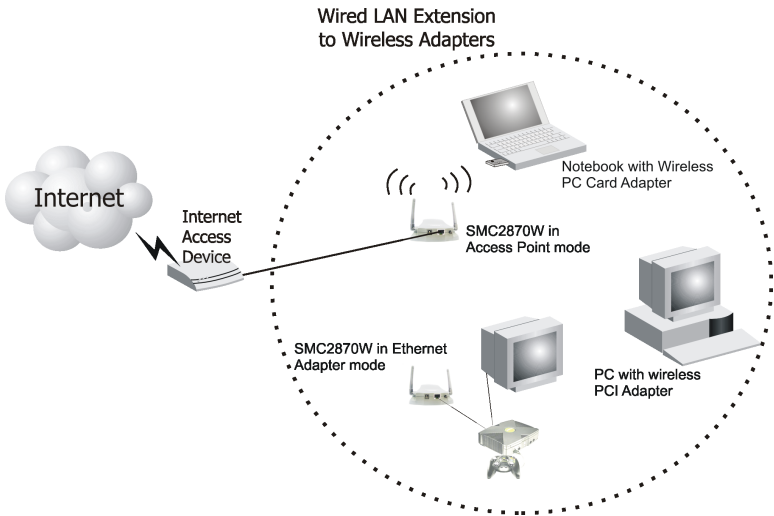
A wireless infrastructure can also support roaming for mobile workers. More than one access point can be configured to create an Extended Service Set (ESS). By placing the access points so that a continuous coverage area is created, wireless users within this ESS can roam freely. All wireless network cards, adapters, and the wireless access point within a specific ESS must be configured with the same SSID.

Note: If Access Point 2 is replaced by an SMC2870W set to Repeater mode then the SMC2870W will not establish its own BSS, but will repeat data messages between Access Point 1 and end users, thus extending the coverage area of Access Point 1.



A Wireless LAN with Internet Access

In this application one SMC2870W is in Client Bridge mode connected to a Microsoft Xbox. Another SMC2870W is acting in Access Point mode. This provides a wireless network and also Internet access for applications including Internet game playing.



TROUBLESHOOTING

Check the following items before you contact technical support.

1. If mobile users do not have roaming access to the SMC2870W:

Make sure that all the SMC2870Ws and stations in the ESS in which the WLAN mobile users can roam are configured to the same WEP setting, SSID, and authentication algorithm.

2. If the management utility cannot connect to the SMC:

Check that your local IP address settings conform to the SMC2870W settings.

3. If you forgot your password or your SMC2870W has locked up, you can reset it to factory defaults by performing the following steps:

- Use a pin to push in the RELOAD button for 5 seconds. This button is located on the bottom of the SMC2870W.
- The SMC2870W will begin to load the default settings.
- The SMC2870W will restart with the factory default settings.

Maximum Distance Table

Important Notice

Maximum distances posted below are actual tested distance thresholds. However, there are many variables such as barrier composition and construction and local environmental interference that may impact your actual distances and cause you to experience distance thresholds far lower than those posted below.

802.11b Wireless Distance Table				
	Speed and Distance Ranges			
Environment	11 Mbps	5.5 Mbps	2 Mbps	1 Mbps
Outdoors ¹	300 m 984 ft	465 m 1525 ft	500 m 1639 ft	515 m 1689 ft
Indoors ²	60 m 197 ft	70 m 230 ft	83 m 272 ft	85 m 279 ft

802.11g Wireless Distance Table												
	Speed and Distance Ranges											
Environment	54 Mbps	48 Mbps	36 Mbps	24 Mbps	18 Mbps	12 Mbps	11 Mbps	9 Mbps	6 Mbps	5 Mbps	2 Mbps	1 Mbps
Outdoors ¹	82 m 269 ft	100 m 328 ft	300 m 984 ft	330 m 1082 ft	350 m 1148 ft	450 m 1475 ft	470 m 1541 ft	485 m 1590 ft	495 m 1623 ft	510 m 1672 ft	520 m 1705 ft	525 m 1722 ft
Indoors ²	20 m 66 ft	25 m 82 ft	35 m 115 ft	43 m 141 ft	50 m 164 ft	57 m 187 ft	66 m 216 ft	71 m 233 ft	80 m 262 ft	85 m 279 ft	90 m 295 ft	93 m 305 ft

Notes: 1. Outdoor Environment: A line-of-sight environment with no interference or obstruction between the Wireless Ethernet Bridge and clients.

2. Indoor Environment: A typical office or home environment with floor to ceiling obstructions between the Wireless Ethernet Bridge and clients.

SPECIFICATIONS

Standards

IEEE 802.3 10BASE-T Ethernet

IEEE 802.3u 100BASE-TX FastEthernet

IEEE 802.11b

IEEE 802.11g

Data Rates

1/2/5.5/6/9/11/12/18/24/36/48/54 Mbps

Frequency Band

IEEE 802.11b/g Radio: 2.4 GHz

USA - FCC 2412~2462MHz (Ch1~Ch11)

Canada - IC2412~2462MHz (Ch1~Ch11)

Europe - ETSI 2412~2472MHz (Ch1~Ch13)

Japan - STD-T66/STD-332412~2484MHz (Ch1~Ch14)

Modulation Type

OFDM, CCK Operating Channels

IEEE 802.11b/g compliant

11 channels (US, Canada)

13 channels (ETSI)

14 channels (Japan)

Antenna

Two 1.5 dBi omni-directional dipole antennas

Sensitivity Modulation Rate

<i>Modulation Rate</i>	<i>Receive Sensitivity Typical (dBm)</i>
802.11b - 1Mbps	-90
802.11b - 2Mbps	-88
802.11b - 5.5Mbps	-85
802.11b- 11Mbps	-82
802.11g - 6Mbps	-88
802.11g - 9Mbps	-87
802.11g - 12Mbps	-84
802.11g - 18Mbps	-82
802.11g - 24Mbps	-79
802.11g - 36Mbps	-75
802.11g - 48Mbps	-68
802.11g - 54Mbps	-68

SPECIFICATIONS

RF Output Power

<i>Modulation Rate</i>	<i>Output Power (dBm)</i>
802.11b - 1Mbps	16
802.11b - 2Mbps	16
802.11b - 5.5Mbps	16
802.11b- 11Mbps	16
802.11g - 6Mbps	15
802.11g - 9Mbps	15
802.11g - 12Mbps	15
802.11g - 18Mbps	15
802.11g - 24Mbps	15
802.11g - 36Mbps	15
802.11g - 48Mbps	12
802.11g - 54Mbps	12

Physical Size

14.30 x 12.20 x 3.03 cm (5.63 x 4.80 x 1.19 in.)

Weight

150 g (5.3 oz)

Power Supply

Input

US: 100-120 AC, 50-60 Hz

EU: 200-240 AC, 50-60 Hz

Output: 5 VDC, 1A

US: DSA-0151A-05A

EU: DSA-0151A-05U

Power Consumption

5 V, 700 mA maximum

Temperature

Operating: 0 to 40 °C (32 to 104 °F)

Storage: -40 to 70 °C (-40 to 158 °F)

Humidity

5% to 95% (non-condensing)

LED Indicators

Power, Ethernet Link/Activity,

Wireless Activity (TX/RX)

Network Management

Windows 98SE/Me/2000/XP SNMP Management Utility

Operating System Compatibility

Windows 98SE/Me/2000/XP

Supported Protocol

TCP/IP, IPX

Encryption

64-bit/128-bit WEP

Passphrase key generation

Compliances

CE Mark

EN55022 Class B

EN55024

IEC 61000-42/3/4/6/11

Emissions

FCC Part 15 Class B

ETSI 300.328

ARIB STD33 and T66

TERMINOLOGY

The following is a list of terminology that is used in this document.

Access Point – An internetworking device that seamlessly connects wired and wireless networks.

Ad Hoc – An ad hoc wireless LAN is a group of computers each with LAN adapters, connected as an independent wireless LAN.

Backbone – The core infrastructure of a network. The portion of the network that transports information from one central location to another central location where it is unloaded onto a local system.

Base Station – In mobile telecommunications, a base station is the central radio transmitter/receiver that maintains communications with the mobile radio telephone sets within its range. In cellular and personal communications applications, each cell or micro-cell has its own base station; each base station in turn is interconnected with other cells' bases.

BSS – BSS stands for "Basic Service Set." It is an Access Point and all the LAN PCs that are associated with it.

CSMA/CA – Carrier Sense Multiple Access with Collision Avoidance.

ESS – ESS (ESS-ID, SSID) stands for "Extended Service Set." More than one BSS is configured to become an Extended Service Set. LAN mobile users can roam between different BSSs in an ESS (ESS-ID, SSID).

Ethernet – A popular local area data communications network, which accepts transmission from computers and terminals. Ethernet operates on a 10 Mbps baseband transmission rate, using a shielded coaxial cable or shielded twisted pair telephone wire.

Infrastructure – An integrated wireless and wired LAN is called an Infrastructure configuration.

Fragmentation Threshold – In the 802.11 Standard, the MAC Layer may fragment and reassemble directed MSDUs or MMPDUs. The fragmentation and defragmentation mechanisms allow for fragment re-transmission.

Preamble Type – Some access points and client card drivers have a radio setting for “Short” RF Preamble. If all the clients and access points in your wireless network have this feature, then enabling it can boost your throughput. However, if a radio does not support this feature, then it will not be able to communicate with any other radios that have this set to “Short.”

Roaming – A wireless LAN mobile user moves around an ESS and maintains a continuous connection to the infrastructure network.

RTS Threshold – Transmitters contending for the medium may not be aware of each other. RTS/CTS mechanism can solve this “Hidden Node Problem.” If the packet size is smaller than the preset RTS Threshold size, the RTS/CTS mechanism will NOT be enabled.

WEP – “Wired Equivalent Privacy” is based on the use of 64-bit or 128-bit keys and the popular RC4 encryption algorithm. Wireless devices without a valid WEP key will be excluded from network traffic.

FOR TECHNICAL SUPPORT, CALL:

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From Europe : Contact details can be found on
www.smc-europe.com or www.smc.com

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http://www.smc.com/index.cfm?action=tech_support_drivers_downloads

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Korea:	82-2-553-0860;	Fax 82-2-553-7202
Japan:	81-45-224-2332 ;	Fax 81-45-224-2331
Australia:	61-2-8875-7887;	Fax 61-2-8875-7777
India:	91-22-8204437 ;	Fax 91-22-8204443

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